



Dow AgroSciences

N-Lock™

NITROGEN STABILISER

Contains 200g/l nitrapyrin in a water based microencapsulated formulation.

Use to delay the loss of nitrogen fertilizer compositions in the soil by inhibiting the nitrification process.

SAFETY PRECAUTIONS

Operator protection:

Engineering control of operator exposure must be used where reasonably practicable in addition to the following personal protective equipment: WEAR SUITABLE PROTECTIVE CLOTHING (COVERALLS), SUITABLE PROTECTIVE GLOVES, AND FACE PROTECTION (FACESHIELD) when handling the concentrate and contaminated surfaces.

However, engineering controls may replace personal protective equipment if a COSHH assessment shows they provide an equal or higher standard of protection.

WASH ALL PROTECTIVE CLOTHING thoroughly after use, especially the insides of gloves.

WASH HANDS/EXPOSED SKIN before eating and drinking/smoking/after work.

WHEN USING DO NOT EAT, DRINK OR SMOKE.

Environmental protection:

DO NOT CONTAMINATE SURFACE WATERS OR DITCHES with chemical or used container.

Storage and disposal:

KEEP OUT OF REACH OF CHILDREN

KEEP AWAY FROM FOOD, DRINK AND ANIMAL FEEDING STUFFS

KEEP IN ORIGINAL CONTAINER, tightly closed, in a safe place.

THIS MATERIAL AND ITS CONTAINER must be disposed of in a safe way.

Classification and labelling of N-Lock under Regulation (EC) no 1272/2008 (CLP)



Product Identifier in accordance to Art 18 of Reg (EC) No 1272/2008 [CLP]: N-Lock

Toxic to aquatic life with long lasting effects.

Dispose of contents and container to a licensed hazardous-waste disposal contractor or collection site except for empty clean containers which can be disposed of as non-hazardous waste.

Contains Nitrapyrin, 1,2-benzisothiazolin-3-one. May produce an allergic reaction.

To avoid risks to human health and the environment, comply with the instructions for use.

Dow AgroSciences Limited

Latchmore Court, Brand Street, Hitchin, Hertfordshire. SG5 1NH.

Telephone: Hitchin (01462) 457272 Fax: (01462) 426605

24 Hour Emergency Telephone Number: +44 (0) 1553 761 251

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SPECIMEN

SPECIMEN



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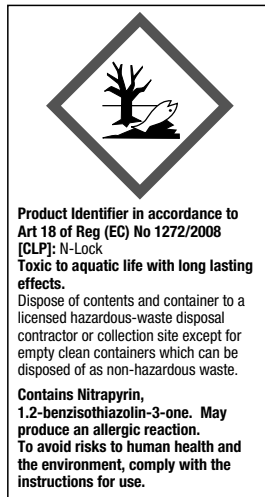
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GENERAL INFORMATION

N-Lock is a nitrification inhibitor for use with nitrogen based fertilizers. When used as directed N-Lock will reduce the loss of nitrogen from the soil by leaching and de-nitrification N-Lock is not a substitute for fertilizer.

N-Lock may be applied to Maize, Winter Wheat, Winter Barley, Winter Oats, Spring barley, Spring Wheat, Spring Oats, Winter Oilseed Rape, Spring Oilseed or land intended for these crops. Advice should be sought where Barley crops are intended for Malting. N-Lock may be applied before or after the application of ammonium nitrate or urea based fertilisers. It may also be applied to land where manure or slurry has been applied. N-Lock may also be mixed with liquid fertilizer.

N-Lock should be incorporated into the soil by rainfall or irrigation, 12mm of rain or irrigation is required within 10 days of application. The optimum timing for N-Lock in spring is in the early spring, typically March.

DIRECTIONS FOR USE

READ ALL DIRECTIONS CAREFULLY BEFORE APPLYING. FAILURE TO FOLLOW LABEL INSTRUCTIONS MAY RESULT IN CROP DAMAGE.

SHAKE BOTTLE WELL BEFORE USE.

Liquid Fertilizers

Apply N-Lock at a rate of 2.5 L/ha.

When applying with liquid fertilizer, a stable emulsion of N-Lock in liquid fertilizer must be formed, uniformly mixing the N-Lock throughout the fertilizer. Add the required amount of N-Lock to the fertilizer, continuously agitating as the product is added to the fertilizer.

Water

N-Lock should be applied via a conventional sprayer in 100-200l of water at a rate of 2.5 L/ha. Add half the required volume of water to the spray tank and begin agitation, pour the required amount of N-Lock into the partially filled spray tank. Continue agitation while topping up the tank and during spraying and transport operations.

Restrictions

- Do not apply more than a total of 5 L of N-Lock per hectare per year.
- 125 days must elapse between applications.

Sprayer Clean-Out Instructions

To avoid injury to desirable plants, thoroughly clean equipment used to apply this product before re-use or using it to apply other chemicals.

1. Immediately after spraying, completely drain the sprayer tank. Any contamination on the outside of the spraying equipment should be removed by washing with clean water.
2. First rinse:
 - Spray the inside of tank with clean water and fill the sprayer with at least one tenth of the spray tank volume.
 - Agitate and circulate for 15 minutes, and flush through booms and hoses.
 - Remove end caps or open ball valves on the ends of each boom section, and flush solution through the boom ends to ensure there is no spray solution trapped between the boom end and the nozzles.
 - Drain tank completely.
3. Second rinse:
 - Fill the tank with clean water.
 - Add a commercial tank cleaning agent as per manufacturer's recommendations while filling the tank with clean water.
 - Agitate and then flush the boom and hoses with the cleaning solution. Top up with water making sure the tank is completely full. Allow to stand for 15 minutes with agitation. Flush the solution out of the spray tank through the spray booms. Remove end caps or open ball valves on the ends of each boom section, and flush solution through the boom ends to ensure there is no spray solution trapped between the boom end and the nozzles.
 - If possible, let the solution stand in the sprayer tank and booms for an extended period of time, overnight if possible.
 - After flushing the boom and hoses, drain tank completely.
 - Remove nozzles and screens and clean separately with a cleaning agent.
4. Third rinse:
 - Rinse the tank with clean water and flush through the boom and hoses using at least one tenth of the spray tank volume.
 - Remove end caps or open ball valves on the ends of each boom section, and flush solution through the boom ends to ensure there is no spray solution trapped between the boom end and the nozzles.
 - Drain tank completely.

Do not use ammonia with chlorine bleach. Using ammonia with chlorine bleach will release a gas with a musty odour which may cause eye, nose, throat and lung irritation. Do not clean equipment in an enclosed area.

Safety Data Sheet

This Safety Data Sheet does not form part of the approved product label.

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product name: N-LOCK™ Nitrogen Stabilizer

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses: Professional use in agrochemicals.

1.3 Details of the supplier of the safety data sheet

COMPANY IDENTIFICATION

DOW AGROSCIENCES LIMITED
LATCHMORE COURT
BRAND STREET
HITCHIN
England
SG5 1NH
UNITED KINGDOM

Customer Information Number:

SDSQuestion@dow.com

1.4 EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: 0031 115 694 982

Local Emergency Contact: 00 31 115 69 4982

SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008:

Chronic aquatic toxicity - Category 2 - H411

For the full text of the H-Statements mentioned in this Section, see Section 16.

Classification according to EU Directives 67/548/EEC or 1999/45/EC:

Dangerous for the environment - R51/53

For the full text of the R-phrases mentioned in this Section, see Section 16.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008:

Hazard pictograms



Hazard statements

H411 Toxic to aquatic life with long lasting effects.

Supplemental Hazard Statements

HU401 To avoid risks to human health and the environment, comply with the instructions for use.

Precautionary statements

P501 Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for empty clean containers which can be disposed of as non-hazardous waste.

Supplemental information

Contains: Nitrapyrin (ISO); 1,2-benzisothiazol-3(2H)-one. May produce an allergic reaction.

2.3 Other hazards

no data available

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**3.2 Mixtures**

This product is a mixture.

CASRN / EC-No. / Index-No.	REACH Registration Number	Concentration	Component	Classification: REGULATION (EC) No 1272/2008
CASRN 1929-82-4 EC-No. 217-682-2 Index-No. 006-057-00-8	-	17.7%	Nitrapyrin (ISO)	Acute Tox. - 4 - H302 Eye Irrit. - 2 - H319 Skin Sens. - 1 - H317 Aquatic Chronic - 2 - H411
CASRN not available EC-No. 922-153-0 Index-No. -	01-2119451097-39	> 10.0 - <= 20.0 %	Hydrocarbons, C10-C13, aromatics, <1% naphthalene	Asp. Tox. - 1 - H304 Aquatic Chronic - 2 - H411
CASRN 57-55-6 EC-No. 200-338-0 Index-No. -	01-2119456809-23	< 10.0 %	Propylene glycol	Not classified
CASRN 91-20-3 EC-No. 202-049-5 Index-No. 601-052-00-2	-	< 1.0 %	Naphthalene	Acute Tox. - 4 - H302 Carc. - 2 - H351 Aquatic Acute - 1 - H400 Aquatic Chronic - 1 - H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

CASRN / EC-No. / Index-No.	Concentration	Component	Classification: 67/548/EEC
CASRN 1929-82-4 EC-No. 217-682-2 Index-No. 006-057-00-8	17.7%	Nitrapyrin (ISO)	Xn - R22 N - R51 - R53 Xi - R36 R43
CASRN not available EC-No. 922-153-0 Index-No. -	> 10.0 - <= 20.0 %	Hydrocarbons, C10-C13, aromatics, <1% naphthalene	Xn - R65 R66 N - R51/53

CASRN / EC-No. / Index-No.	Concentration	Component	Classification: 67/548/EEC
CASRN 57-55-6 EC-No. 200-338-0 Index-No. -	< 10.0 %	Propylene glycol	Not classified
CASRN 91-20-3 EC-No. 202-049-5 Index-No. 601-052-00-2	< 1.0 %	Naphthalene	Carc.Cat.3 - R40 Xn - R22 N - R50 - R53

For the full text of the R-phrases mentioned in this Section, see Section 16.

SECTION 4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice: If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control centre or doctor for treatment advice.

Skin contact: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control centre or doctor for treatment advice.

Eye contact: Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Call a poison control centre or doctor for treatment advice. Suitable emergency eye wash facility should be available in work area.

Ingestion: No emergency medical treatment necessary.

4.2 Most important symptoms and effects, both acute and delayed: Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control centre or doctor, or going for treatment.

SECTION 5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media: To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

Unsuitable extinguishing media: no data available

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products: Under fire conditions some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Combustion products may include and are not limited to: Nitrogen oxides. Hydrogen chloride. Carbon monoxide. Carbon dioxide.

Unusual Fire and Explosion Hazards: This material will not burn until the water has evaporated. Residue can burn. Container may rupture from gas generation in a fire situation.

5.3 Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the

container. Burning liquids may be extinguished by dilution with water. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. To extinguish combustible residues of this product use water, fog, carbon dioxide, dry chemical or foam. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures: Isolate area. Keep unnecessary and unprotected personnel from entering the area. Keep upwind of spill. Ventilate area of leak or spill. Refer to section 7, Handling, for additional precautionary measures. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

6.2 Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information. Spills or discharge to natural waterways is likely to kill aquatic organisms.

6.3 Methods and materials for containment and cleaning up: Contain spilled material if possible. Small spills: Absorb with materials such as: Clay. Dirt. Sand. Sweep up. Collect in suitable and properly labeled containers. Large spills: Contact Dow AgroSciences for clean-up assistance. See Section 13, Disposal Considerations, for additional information.

6.4 Reference to other sections: References to other sections, if applicable, have been provided in the previous sub-sections.

SECTION 7. HANDLING AND STORAGE

7.1 Precautions for safe handling: Keep out of reach of children. Do not swallow. Avoid contact with eyes, skin, and clothing. Avoid breathing vapour or mist. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

7.2 Conditions for safe storage, including any incompatibilities: Store in a dry place. Store in original container. Keep container tightly closed when not in use. Do not store near food, foodstuffs, drugs or potable water supplies.

7.3 Specific end use(s): Refer to product label.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value/Notation
Nitrpyrin (ISO)	ACGIH	TWA	10 mg/m ³
	ACGIH	STEL	20 mg/m ³
Propylene glycol	US WEEL	TWA	10 mg/m ³
	GB EH40	TWA	474 mg/m ³ 150 ppm
	GB EH40	TWA	10 mg/m ³
	ACGIH	TWA	10 ppm
Naphthalene	ACGIH	TWA	Absorbed via skin
	ACGIH	TWA	10 ppm
	Dow IHG	TWA	Absorbed via skin
	Dow IHG	TWA	Absorbed via skin
	Dow IHG	STEL	15 ppm
	Dow IHG	STEL	Absorbed via skin
	91/322/EEC	TWA	50 mg/m ³ 10 ppm

RECOMMENDATIONS IN THIS SECTION ARE FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING WORKERS. APPLICATORS AND HANDLERS SHOULD SEE THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING.

8.2 Exposure controls

Engineering controls: Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations.

Individual protection measures

Eye/face protection: Use chemical goggles. Chemical goggles should be consistent with EN 166 or equivalent.

Skin protection

Hand protection: Use chemical resistant gloves classified under Standard EN374: Protective gloves against chemicals and micro-organisms. Examples of preferred glove barrier materials include: Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Styrene/butadiene rubber. Viton. Examples of acceptable glove barrier materials include: Butyl rubber. Chlorinated polyethylene. Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). When prolonged or frequently repeated contact may occur, a glove with a protection class of 4 or higher (breakthrough time greater than 120 minutes according to EN 374) is recommended. When only brief contact is expected, a glove with a protection class of 1 or higher (breakthrough time greater than 10 minutes according to EN 374) is recommended. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Other protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use an approved respirator. Selection of air-purifying or positive-pressure supplied-air will depend on the specific operation and the potential airborne concentration of the material. For emergency conditions, use an approved positive-pressure self-contained breathing apparatus.

Use the following CE approved air-purifying respirator: Organic vapour cartridge with a particulate pre-filter, type AP2.

Environmental exposure controls

See SECTION 7: Handling and storage and SECTION 13: Disposal considerations for measures to prevent excessive environmental exposure during use and waste disposal.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance

Physical state	Liquid.
Colour	Tan
Odour	Mild
Odor Threshold	No test data available
pH	8 1% pH <i>Electrode</i>
Melting point/range	Not applicable
Freezing point	No test data available
Boiling point (760 mmHg)	No test data available
Flash point	closed cup > 100 °C <i>Pensky-Martens Closed Cup ASTM D 93</i>
Evaporation Rate (Butyl Acetate = 1)	No test data available
Flammability (solid, gas)	Not Applicable
Lower explosion limit	No test data available
Upper explosion limit	No test data available
Vapour Pressure	No test data available
Relative Vapour Density (air = 1)	No test data available
Relative Density (water = 1)	No test data available
Water solubility	No test data available
Partition coefficient: n-octanol/water	no data available
Auto-ignition temperature	No test data available
Decomposition temperature	No test data available
Dynamic Viscosity	103 mPa.s at 40 °C <i>OECD 114</i>
Kinematic Viscosity	no data available
Explosive properties	Not explosive
Oxidizing properties	no data available

9.2 Other information

Liquid Density	1.12 g/cm ³ at 20 °C <i>Digital density meter</i>
Molecular weight	no data available

NOTE: The physical data presented above are typical values and should not be construed as a specification.

SECTION 10. STABILITY AND REACTIVITY

10.1 Reactivity: No dangerous reaction known under conditions of normal use.

10.2 Chemical stability: Unstable at elevated temperatures.

10.3 Possibility of hazardous reactions: Polymerization will not occur.

10.4 Conditions to avoid: Some components of this product can decompose at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems.

10.5 Incompatible materials: Avoid contact with: Acids. Oxidizers. Avoid contact with metals such as: Aluminum. Aluminum alloys. Magnesium. Magnesium alloys.

10.6 Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Hydrogen chloride. Nitrogen oxides. Toxic gases are released during decomposition.

SECTION 11. TOXICOLOGICAL INFORMATION

Toxicological information on this product or its components appear in this section when such data is available.

11.1 Information on toxicological effects

Acute toxicity

Acute oral toxicity

Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

As product: Single dose oral LD50 has not been determined.

For similar material(s):

LD50, > 5,000 mg/kg Estimated.

Acute dermal toxicity

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

As product: The dermal LD50 has not been determined.

For similar material(s):

LD50, > 5,000 mg/kg Estimated.

Acute inhalation toxicity

Prolonged excessive exposure may cause adverse effects. Based on the available data, respiratory irritation was not observed.

As product: The LC50 has not been determined.

For similar material(s):

LC50, Rat, male and female, 4 Hour, Aerosol, > 3.51 mg/l No deaths occurred at this concentration.

Maximum attainable concentration.

Skin corrosion/irritation

Brief contact may cause moderate skin irritation with local redness.

Serious eye damage/eye irritation

May cause moderate eye irritation.

Corneal injury is unlikely.

Sensitization

For similar material(s):

Did not demonstrate the potential for contact allergy in mice.

For respiratory sensitization:

No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

For the active ingredient(s):

In animals, effects have been reported on the following organs:

Blood.

Kidney.

Liver.

Female reproductive organs.

Dose levels producing these effects were many times higher than any dose levels expected from exposure due to use.

Based on information for component(s):

In animals, effects have been reported on the following organs:

Lung.

Gastrointestinal tract.

Thyroid.

Urinary tract.

Dose levels producing these effects were many times higher than any dose levels expected from exposure due to use.

In rare cases, repeated excessive exposure to propylene glycol may cause central nervous system effects.

Carcinogenicity

For the active ingredient(s): Kidney effects and/or tumors have been observed in male rats. These effects are believed to be species specific and unlikely to occur in humans.

Teratogenicity

For the active ingredient(s): Has been toxic to the foetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals.

Reproductive toxicity

For the active ingredient(s): In animal studies, did not interfere with reproduction.

Mutagenicity

For the active ingredient(s): In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

Aspiration Hazard

No aspiration toxicity classification

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicological information on this product or its components appear in this section when such data is available.

12.1 Toxicity

Nitrapyrin (ISO)

Acute toxicity to fish

Material is toxic to aquatic organisms (LC50/EC50/IC50 between 1 and 10 mg/L in the most sensitive species).

LC50, *Lepomis macrochirus* (Bluegill sunfish), static test, 96 Hour, 3.4 - 7.9 mg/L, OECD Test Guideline 203 or Equivalent

LC50, Rainbow trout (*Oncorhynchus mykiss*), static test, 96 Hour, 4 mg/l

Acute toxicity to aquatic invertebrates

LC50, *Daphnia magna* (Water flea), flow-through test, 48 Hour, 2.2 mg/l

Acute toxicity to algae/aquatic plants

ErC50, *Pseudokirchneriella subcapitata* (green algae), 72 Hour, Growth rate inhibition, 1.7 mg/l

Chronic toxicity to fish

NOEC, Fathead minnow (*Pimephales promelas*), 34 d, 2.87 mg/l

Toxicity to Above Ground Organisms

Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg).

Material is slightly toxic to birds on a dietary basis (LC50 between 1001 and 5000 ppm).

oral LD50, *Anas platyrhynchos* (Mallard duck), 2708mg/kg bodyweight.

dietary LC50, *Anas platyrhynchos* (Mallard duck), 1466mg/kg diet.

dietary LC50, *Coturnix japonica* (Japanese quail), 820mg/kg diet.

Toxicity to soil-dwelling organisms

LC50, *Eisenia fetida* (earthworms), 15 d, survival, 209 mg/kg

Hydrocarbons, C10-C13, aromatics, <1% naphthalene

Acute toxicity to fish

For similar material(s):

Material is toxic to aquatic organisms (LC50/EC50/IC50 between 1 and 10 mg/L in the most sensitive species).

For similar material(s):

EC50, *Oncorhynchus mykiss* (rainbow trout), 96 Hour, 3.6 mg/l

Acute toxicity to aquatic invertebrates

For similar material(s):

EC50, *Daphnia magna* (Water flea), 48 Hour, 1.1 mg/l

Acute toxicity to algae/aquatic plants

For similar material(s):

EC50, *Pseudokirchneriella subcapitata* (green algae), 72 Hour, 7.9 mg/l

Propylene glycol**Acute toxicity to fish**

Material is not classified as dangerous to aquatic organisms (LC50/EC50/IC50/LL50/EL50 greater than 100 mg/L in most sensitive species).
LC50, *Oncorhynchus mykiss* (rainbow trout), static test, 96 Hour, 40,613 mg/l, OECD Test Guideline 203

Acute toxicity to aquatic invertebrates

LC50, *Ceriodaphnia dubia* (water flea), static test, 48 Hour, 18,340 mg/l, OECD Test Guideline 202

Acute toxicity to algae/aquatic plants

ErC50, *Pseudokirchneriella subcapitata* (green algae), 96 Hour, Growth rate inhibition, 19,000 mg/l, OECD Test Guideline 201

Toxicity to bacteria

NOEC, *Pseudomonas putida*, 18 Hour, > 20,000 mg/l

Chronic toxicity to aquatic invertebrates

NOEC, *Ceriodaphnia dubia* (water flea), semi-static test, 7 d, number of offspring, 13,020 mg/l

Naphthalene**Acute toxicity to fish**

Material is very toxic to aquatic organisms (LC50/EC50/IC50 below 1 mg/L in the most sensitive species).
LC50, *Oncorhynchus mykiss* (rainbow trout), 96 Hour, 0.11 mg/l

Acute toxicity to aquatic invertebrates

EC50, *Daphnia magna* (Water flea), static test, 48 Hour, 1.6 - 24.1 mg/l

Chronic toxicity to fish

NOEC, Other, flow-through, 40 d, mortality, 0.37 mg/l

12.2 Persistence and degradability**Nitrapyrin (ISO)**

Biodegradability: Chemical degradation (hydrolysis) is expected in the environment within days to weeks. Degradation is expected in the soil environment within days to weeks.

Theoretical Oxygen Demand: 0.97 mg/mg

Stability in Water (1/2-life)

Hydrolysis, half-life, 186 Hour, pH 5, Half-life Temperature 25 °C

Hydrolysis, half-life, 173 - 233 Hour, pH 7, Half-life Temperature 25 °C

Hydrolysis, half-life, 129 Hour, pH 9, Half-life Temperature 25 °C

Hydrocarbons, C10-C13, aromatics, <1% naphthalene

Biodegradability: For similar material(s): Biodegradation may occur under aerobic conditions (in the presence of oxygen). Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.

Propylene glycol

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Biodegradation may occur under anaerobic conditions (in the absence of oxygen).

10-day Window: Pass

Biodegradation: 81 %

Exposure time: 28 d

Method: OECD Test Guideline 301F or Equivalent

10-day Window: Not applicable

Biodegradation: 96 %

Exposure time: 64 d

Method: OECD Test Guideline 306 or Equivalent

Naphthalene

Biodegradability: Material is expected to be readily biodegradable.

12.3 Bioaccumulative potential

Nitrapyrin (ISO)

Bioaccumulation: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).

Partition coefficient: n-octanol/water(log Pow): 3.324 Measured

Bioconcentration factor (BCF): < 85 Lepomis macrochirus (Bluegill sunfish) 30 d Measured

Hydrocarbons, C10-C13, aromatics, <1% naphthalene

Bioaccumulation: No data available for this product. For similar material(s): Bioconcentration potential is high (BCF > 3000 or Log Pow between 5 and 7).

Propylene glycol

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient: n-octanol/water(log Pow): -1.07 Measured

Bioconcentration factor (BCF): 0.09 Estimated.

Naphthalene

Bioaccumulation: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).

Partition coefficient: n-octanol/water(log Pow): 3.3 Measured

Bioconcentration factor (BCF): 40 - 300 Fish. 28 d Measured

12.4 Mobility in soil

Nitrapyrin (ISO)

Potential for mobility in soil is medium (Koc between 150 and 500).

Partition coefficient(Koc): 321 Measured

Hydrocarbons, C10-C13, aromatics, <1% naphthalene

No relevant data found.

Propylene glycol

Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

Potential for mobility in soil is very high (Koc between 0 and 50).

Partition coefficient(Koc): < 1 Estimated.

Naphthalene

Potential for mobility in soil is medium (Koc between 150 and 500).

Partition coefficient(Koc): 240 - 1300 Measured

12.5 Results of PBT and vPvB assessment

Nitrapyrin (ISO)

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Hydrocarbons, C10-C13, aromatics, <1% naphthalene

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Propylene glycol

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Naphthalene

This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

12.6 Other adverse effects

Nitrapyrin (ISO)

No relevant data found.

Hydrocarbons, C10-C13, aromatics, <1% naphthalene

This substance is not in Annex I of Regulation (EC) No 1005/2009 on substances that deplete the ozone layer.

Propylene glycol

This substance is not in Annex I of Regulation (EC) No 1005/2009 on substances that deplete the ozone layer.

Naphthalene

This substance is not in Annex I of Regulation (EC) No 1005/2009 on substances that deplete the ozone layer.

SECTION 13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

The definitive assignment of this material to the appropriate EWC group and thus its proper EWC code will depend on the use that is made of this material. Contact the authorized waste disposal services.

SECTION 14. TRANSPORT INFORMATION

Classification for ROAD and Rail transport (ADR/RID):

14.1	UN number	UN 3082
14.2	Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(Nitrapyrin)
14.3	Class	9
14.4	Packing group	III
14.5	Environmental hazards	Nitrapyrin
14.6	Special precautions for user	

Hazard identification No: 90

Classification for SEA transport (IMO-IMDG):

14.1	UN number	UN 3082
14.2	Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(Nitrapyrin)
14.3	Class	9
14.4	Packing group	III
14.5	Environmental hazards	Nitrapyrin
14.6	Special precautions for user	EmS: F-A, S-F
14.7	Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code	Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/CAO):

14.1	UN number	UN 3082
14.2	Proper shipping name	Environmentally hazardous substance, liquid, n.o.s.(Nitrapyrin)
14.3	Class	9
14.4	Packing group	III
14.5	Environmental hazards	Not applicable
14.6	Special precautions for user	No data available.

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

SECTION 15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

REACH Regulation (EC) No 1907/2006

This product contains only components that have been either pre-registered, registered, are exempt from registration or are regarded as registered according to Regulation (EC) No. 1907/2006 (REACH). The aforementioned indications of the REACH registration status are provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. It is the buyer's/user's responsibility to ensure that his/her understanding of the regulatory status of this product is correct.

Seveso II - Directive 96/82/EC and its amendments:

Listed in Regulation: Petroleum products: (a) gasolines and naphthas, (b) kerosenes (including jet fuels), (c) gas oils (including diesel fuels, home heating oils and gas oil blending streams),(d) heavy fuel oils

Number in Regulation: 13

2,500 t

25,000 t

15.2 Chemical Safety Assessment

For proper and safe use of this product, please refer to the approval conditions laid down on the product label.

SECTION 16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H351	Suspected of causing cancer.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.

Full text of R-phrases referred to under sections 2 and 3

R22	Harmful if swallowed.
R36	Irritating to eyes.
R40	Limited evidence of a carcinogenic effect.
R43	May cause sensitisation by skin contact.
R50	Very toxic to aquatic organisms.
R51	Toxic to aquatic organisms.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R53	May cause long-term adverse effects in the aquatic environment.
R65	Harmful: may cause lung damage if swallowed.
R66	Repeated exposure may cause skin dryness or cracking.

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) No 1272/2008

Aquatic Chronic - 2 - H411 - Calculation method

Revision

Identification Number: 101208990 / A293 / Issue Date: 31.03.2015 / Version: 3.1

DAS Code: GF-3181

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

91/322/EEC	Europe. Commission Directive 91/322/EEC on establishing indicative limit values
Absorbed via skin	Absorbed via skin
ACGIH	USA. ACGIH Threshold Limit Values (TLV)
Dow IHG	Dow Industrial Hygiene Guideline
GB EH40	UK. EH40 WEL - Workplace Exposure Limits
STEL	Short term exposure limit
TWA	Time weighted average
US WEEL	USA. Workplace Environmental Exposure Levels (WEEL)

Information Source and References

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

DOW AGROSCIENCES LIMITED urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

SPECIMEN

SPECIMEN

Spec Number: 900-023276

Component MID: 99030327

Product Name: N-Lock

Spec Type: Booklet laminated front

Component Size: 10 L

Country: OUS - United Kingdom

Supersedes: 900-021540 / 11038517

Reason for Revision: Regulatory Update

Printer: CCL Label

EPA/PMRA Accepted Date: 07/03/15 Received

Notification Date: _____

Non-Notification Date: _____

Approvals

Template Master: 900-000364 (CCL8550)

Size: 6-1/4" H x 6-7/8" W

Image Area: 6" H x 4-7/8" W

Colors:

- Process: Black
- Process: Cyan
- Process: Magenta
- Process: Yellow
- Varnish
- Laminate

DGT: Siva Date: 07/20/15

- 1st Proof 4th Proof
- 2nd Proof 5th Proof
- 3rd Proof 6th Proof

Base Label

Booklet

Size: 6-1/4" H x 5-1/2" W

Page Count: 16

Colors:

- Process: Black
- Process: Cyan
- Process: Magenta
- Process: Yellow

Core Size: Helena/Omnium/Platte Front - 6 in.

Roll Size: Helena/Omnium/Platte Front - 16 in.
max.

Copy (Fasson) Position: Helena/Omnium/Platte
Back - 4

Print

RR DONNELLEY